0004

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

February 20, 2007

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor
Joe Helfrich, Environmental Scientist III, Team Lead

FROM: SC Steve Christensen, Environmental Scientist II

RE: Lease Addition U-024316, U-46484, U-61048 and U-61049, Task ID #2734, CO-OP Mining Company, C/015/0025

SUMMARY:

On July 21st, 2005, COOP Mining Company (the Permittee) submitted an application to extend the Bear Canyon Permit boundary by adding 60 acres to lease U024316, 2,196.09 acres to lease U-61409, 1,400 acres to lease U-46484, 1,108.27 acres to U-61048 and 2,740.00 acres of private property (Mohrland Addition). The application is considered a major revision to the current MRP due to the extensive size of the proposed area additions (approximately 7,504 acres).

The Division of Oil, Gas and Mining (the Division) performed a technical analysis of the submittal and a letter outlining the deficiencies of the application was sent to the Permittee on February 1st, 2006 (Task ID# 2292). On May 21st, 2006, the Division received the Permittee's response to the deficiency letter. The Division performed a subsequent second round of technical analysis and a letter outlining the outstanding deficiencies was sent to the Permittee on July 13, 2006 (Task ID #2526). The Permittee responded to the second round of deficiencies on August 9th, 2006. The Division review of that response was assigned Task ID #2597. The Permittee provided the Division with their response to Task ID #2597 on October 30th, 2006. The Division performed a fourth technical review (Task ID#2680) and provided the Permittee with a deficiency letter on December 11, 2006.

The following memo is the 5th round of hydrologic analysis for the Bear Canyon Lease Expansion as it relates to the hydrology discipline of the R645 State of Utah Coal Mining Rules. For tracking purposes, this analysis has been assigned Task ID #2734.

Hydrologic information provided in the application meets the requirements of the **State of Utah R645-Coal Mining Rules**. The proposed amendment should be approved.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

COMPLETENESS

Regulatory Reference: 30 CFR 777.15; R645-301-150.

Analysis:

The application meets the hydrology requirements for Clear and Concise, Completeness as provided in R645-301-121.200, -121.300,-150. The Permittee has revised pages 7-26 and 7-36 of the MRP as requested in the last technical analysis. On pages 7-26 and 7-36 of the MRP, the Permittee has revised the sub-sections titles to Ground Water Site Selection and Surface Water Site Selection respectively.

In addition, the Permittee provided a hard copy of the entire MRP with redline strikeout. Upon inspection of the submitted hard copy, all revisions and corrections to the plan have been incorporated correctly into the main body of the MRP.

Findings:

The hydrologic information provided meets the Completeness requirements of the State of Utah R-645 Coal Mining Rules.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Baseline Information

The application meets the hydrology Environmental Description for Baseline Information requirements as provided in R645-301-724. Pages 7-26 and 7-36 of the submittal outline the monitoring and data collection commitments provided by the Permittee for groundwater and surface water respectively. In each instance, the Permittee has committed to obtaining three

years of baseline data, which well exceeds the minimum requirements provided by law. In addition, the Permittee has committed to following the Division recommended list for baseline parameters.

Page 7-53A of the submittal contains a surface and ground water monitoring matrix (Table 7-14A and Table 7-14B respectively) that list sites to be utilized in collecting baseline data. The Permittee has provided a baseline monitoring start date that insures that a minimum of three years of baseline data will be obtained prior to mining in that area. In addition, references to Tables 7-13 and 7-17 are provided. These tables provide a comprehensive list of the ground and surface water quality monitoring parameters that will be analyzed for. Table 7-14 is referenced as where to the specific months and actual monitoring schedule is listed. Plate 7-4 depicts the locations of the current and proposed monitoring points.

State Appropriated Water Rights

The application meets the hydrology requirements for Environmental Description of State Appropriated Water Rights as provided in **R645-301-724.100 and –724.200**.

Table 7-6 of the MRP on pages 7-32 thru 7-33B provides a comprehensive list of the state appropriated water rights within the existing permit area as well as in the proposed lease expansion area. The table lists the water right number, the owner of the water right, the priority date, a legal description of the place of use, a description as to the type of diversion as well as the nature of use.

Plate 7-12: Water Rights depicts the locations of the water rights identified in Table 7-6. In addition, Plate 7-12 depicts the extent of point-to-point diversions for the state appropriated water rights that are utilized in that manner.

Probable Hydrologic Consequences Determination

The application meets the Probable Hydrologic Consequences (PHC) Determination requirements as provided in **R645-301-728**. Appendix 7-J contains a report compiled by Mayo and Associates, LC in June 2001. The report, *Probable Hydrologic Consequences of Coal Mining in the Bear Canyon Mine Permit Area and Recommendations for Surface Water and Groundwater Monitoring*, describes the surface-water and groundwater systems of the existing mine lease in 2001, as well as the Wild Horse Ridge Area and the Mohrland area. Dr. Mayo was contacted by C.W. Mining to provide an addendum to the report in lieu of the proposed lease expansion into the Mohrland area. The addendum was provided in an effort to more specifically address the potential impacts of mining in the proposed lease expansion. The original report produced in 2001 did examine the ground and surface water resources in the proposed expansion area. However, upon review of the document, it was determined that a more detailed analysis was required for the proposed lease expansion. Dr. Mayo, for clarification, refers to two distinct areas contained within the permit expansion area: the Mohrland Area and the McCadden Hollow Area. The Mohrland area includes federal leases U-61048, U-61049 and U-38727 as well as a

large area of fee land. The McCadden Area is located in the northwest portion of the proposed lease expansion and is contained within federal lease U-46484 and U-24316. The Bear Canyon Fault separates these two areas. Mining in the Mohrland area will include the Hiawatha and Tanks seams. The Blind Canyon seam will not be mined in the Mohrland Area. The Blind Canyon coal seam is slated for mining within the McCadden Area.

The PHC determinations presented in Appendix 7-J are based on the baseline hydrologic information. The PHC determinations make findings on potential hydrologic impacts due to coal mining in the permit area as outlined in R645-301-728.300. The PHC determinations are accurate and complete and find that the coal mining activities proposed for the permit area will not result in the contamination, diminution, or interruption of State-appropriated water or of surface water or groundwater within or adjacent to the permit area.

Groundwater Monitoring Plan

The application meets the hydrology Environmental Description for Groundwater Monitoring requirements as provided in **R645-301-724.100**. The Permittee has committed to collecting 3 years of baseline data on water resources that could potentially be impacted by mining activity. Plate 7-4 depicts the current and proposed monitoring sites. Upon comparing Plate 7-4 with the mine workings maps (Plate 5-1A Blind Canyon Seam Workings, Plate 5-1B Hiawatha Seam Workings and Plate 5-1C Tank Seam Workings) and upon several field visits in the proposed lease expansion, the Permittee has produced a monitoring plan that will adequately quantify and monitor groundwater resources in the area. The Division recommended list for baseline parameters will be followed which exceeds the minimum required by law. In addition, every five years baseline parameters will be collected. The remainder of the time, field readings will be collected.

Surface-Water Monitoring Plan

The application meets the hydrology Environmental Description for Surface-Water Monitoring Plan requirements as provided in **R645-301-724.200**. The proposed permit area contains the headwaters of all the perennial streams that could be affected by underground mining activity. As such, the major groundwater sources providing base flow to these drainages are to be monitored. In addition, surface water monitoring sites have been selected at all major confluences and at other points of interest as identified by various stakeholders (water rights holders, USDA Forest Service etc...). The parameters to be tested for and the schedule to be followed are based on the probable hydrologic consequences (PHC) as outlined in Appendix 7-J. Three years of baseline data will be collected which exceeds that required by law. The Division recommended list for baseline parameters will be followed which also exceeds the minimum required by law. Sampling will be primarily achieved through field parameters with a full suite of baseline data collected every five years. Plate 7-4 depicts the current and proposed monitoring sites. Upon comparing Plate 7-4 with the mine workings maps (Plate 5-1A Blind Canyon Seam Workings, Plate 5-1B Hiawatha Seam Workings and Plate 5-1C Tank Seam Workings) and upon several field visits in the proposed lease expansion, the Permittee has

produced a monitoring plan that will adequately quantify and monitor groundwater resources in the area.

Findings:

The information provided for the Hydrologic Resource Information regulations meets the requirements of the State of Utah R-645 Coal Mining Rules.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Monitoring and Sampling Location Maps

The application meets the hydrology requirements for Maps, Plans and Cross Sections of Resource Information for Monitoring and Sampling Location maps as provided in **R645-301-722** and -731. Plate 7N-2 depicts water-sampling locations utilized in acquiring baseline data. Plate 7-4 depicts historic monitoring points that were utilized in the collection of baseline data as well as both current and proposed ground and surface water monitoring sites for the proposed lease expansion area.

Subsurface Water Resource Maps

The application meets the hydrology requirements for Maps, Plans and Cross Sections of Resource Information for Subsurface Water Resource Maps as provided in **R645-301-722**. Plate 7-12 depicts the state appropriated water rights for both the existing permit area as well as the proposed lease expansion. Upon inspection of the State of Utah Water Rights database, it appears that all state appropriated ground water rights are depicted on Plate 7-12. Plate 7-4 identifies the subsurface water resources within the existing permit area as well as the proposed lease expansion.

Surface Water Resource Maps

The application meets the hydrology requirements for Maps, Plans and Cross Sections of Resource Information for Surface Water Resource Maps as provided in R645-301-722. Plate 7-12 depicts the state appropriated water rights for both the existing permit area as well as the proposed lease expansion. Upon inspection of the State of Utah Water Rights database, it appears that all state appropriated surface water rights are depicted on Plate 7-12. Plate 7-4 identifies the surface water resources within the existing permit area as well as the proposed lease expansion.

Findings:

Hydrologic information for the Maps, Plans and Cross Sections of Resource Information regulations meets the requirements of the State of Utah R-645 Coal Mining Rules.

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Surface and Groundwater Monitoring

The application meets the hydrology Operation Plan requirements for Surface and Groundwater Monitoring as provided in **R645-301-731.210 and –731.220.**

Table 7-12 and Table 7-16 provide detailed information regarding Baseline, Operational and Post-mining water monitoring for ground and surface water respectively. The Permittee has committed to obtaining three years of baseline data prior to mining in a given area. The Permittee states that operational monitoring will involve continued monitoring every year until two years after surface reclamation activities have ceased, and that the sites will be monitored 4 times annually. The tables also provide descriptions as to the types of data that will be collected as well as their respective reporting requirements.

Table 7-14 on page 7-53 "Water Monitoring Matrix: Operational Phase of Mining" lists the streams, springs and monitoring wells that will be monitored as well as the proposed monitoring schedule. The proposed monitoring program is based on the PHC analysis compiled in Appendix 7-J. Based on this, the Permittee has proposed an adequate ground and surface water-monitoring program. All of the sites listed on table 7-14 are depicted on Plate 7-4 Water Monitoring.

Various stakeholders identified several water resource sites during this process (during sit down discussions as well as field visits) that weren't initially included in the proposed monitoring plan. The Permittee has incorporated these additional sites into their proposed water-monitoring program. These sites include: springs SBC-16A and SBC-16B located in T 16S R8E Sect 13 NE ¼ NW ¼, Wild Horse Spring (SBC-22) located in T 16S R7E Sect 13 SE ¼ SE ¼ and Bear Canyon Spring (SMH-5) located in T 16S R7E Sect 12 NE ¼ SW ¼. These additional sites are listed in Table 7-14 as well as depicted on Plate 7-4.

Upon the approval of the proposed lease expansion, monitoring will begin on the additional ground and surface water monitoring sites identified during the permitting process. Three years of baseline will be collected on all additional sites added after 2001 (page 7-49).

On page 7-60A, the Permittee describes the surface and groundwater monitoring procedures that will be utilized during undermining of the upper reaches of the Left and Right Forks of Fish Creek. The Permittee has committed to weekly monitoring of the areas one month prior to mining in the area. The weekly monitoring will continue until one month after mining has left the area. Monitoring will then be reduced to once a month after mining activities have passed the area. Monitoring will then be reduced to once a month for an additional 6 months at which time, monitoring will fall back to a quarterly schedule. During the weekly monitoring, the Permittee will submit weekly reports to the Division via e-mail. The actual start time of the weekly monitoring will be determined based on continual underground surveying that is required by MSHA.

Eight sites have been identified for weekly monitoring during the undermining phase of the Left Fork of Fish Creek. Five sites have been slated for weekly monitoring on the Right Fork of Fish Creek. See Table 7-14 for a listing of the sites and Plate 7-4 for their respective locations. The sites slated for weekly monitoring on each of the drainages encompass both surface and groundwater sampling sites. In addition, upon field inspections, areas where perennial flow began for both the Left and Right Forks of Fish Creek were focused on and representative sampling sites in these areas were incorporated into the weekly monitoring program. The increased monitoring will include sites FC-2, FC-3, FC-4, FC-5 and SCC-2 for the Right Fork of Fish Creek. The Left Fork of Fish Creeks weekly monitoring sites include SBC-16, SBC-16A, SBC-16B FC-1, FC-6, SBC-18, SBC-20 and SBC-21.

Groundwater Monitoring

The application meets the hydrology Operation Plan requirements for Groundwater Monitoring as provided in **R645-301-731.210**.

Plate 7-4 depicts the current and proposed monitoring sites. Upon comparing Plate 7-4 with the mine workings maps (Plate 5-1A Blind Canyon Seam Workings, Plate 5-1B Hiawatha Seam Workings and Plate 5-1C Tank Seam Workings) and upon several field visits in the proposed lease expansion, the Permittee has produced a monitoring plan that will adequately quantify and monitor groundwater resources in the proposed lease expansion as well as in adjacent areas.

Table 7-12 on page 7-51 provides an overview of the ground water sampling program to be utilized during baseline monitoring, operational mining as well as post-mining monitoring. Table 7-13 on page 7-52 provides a list of the ground water quality parameters that will be analyzed for during the monitoring program. Table 7-14 on page 7-53 provides a comprehensive list of the groundwater monitoring sites (springs and monitoring wells) to be monitored during

the operational phase of mining. Plate 7-4 depicts the locations of the current and proposed monitoring site locations.

The Permittee has committed to sampling numerous ground water sites with the increased monitoring protocol outlined on page 7-60A, Undermining of Perennial Streams. Page 7-60A details the increased monitoring to be performed during the undermining of the Left and Right Fork of Fish Creek. Ground water sites included in this increased monitoring schedule include SBC-16, SBC-16A, SBC-16B, SBC-18, SBC-20, SBC-21 and SCC-2. Table 7-14, Water Monitoring Matrix: Operational Phase of Mining on page 7-53 denotes all sites slated for increased monitoring during the undermining of perennial drainages with a footnote.

Additionally, the Permittee has provided the commitment to monitor additional sites identified by the USDA Forest Service as protected waters. On page 7-61B the Permittee provides a map (Figure 7-0: Forest Service Protected Water Resources) that depicts the names and locations of these protected waters. Page 7-61A provides a table of the protected water resources with their respective Forest Service names and corresponding water monitoring site names. Upon consultation with Forest Service personnel, the Permittee agreed to monitor the South McCadden Trough spring located in T 16S R7E SE ¼ of the SW ¼ of Section 11 (site SMH-3 as depicted on Plate 7-4) and historical monitoring site FBC-12 located in T16 S R7E NW ¼ of Section 13 (site SBC-23 as depicted on Plate 7-4). The Permittee has also corrected an error identified on Plate 7-4 in the previous analysis. Historical monitoring site SBC-12 (16-7-13-1) was incorrectly depicted in two locations. It is now correctly depicted on Plate 7-4.

Groundwater monitoring sites were selected because they were either major contributors to surface water systems, or they were springs that have been developed for beneficial use or have water rights assigned to them. The major contributors to surface water systems in the proposed lease expansion are SBC-16, SBC-16A, SBC-16B, SMH-3, SMH-4, SBC-12, SBC-18, SBC-20, SBC-21, SCC-1, SCC-3 and SCC-5. Perennial portions of the streams fed by sites SBC-16, SBC-16A, SBC-16B, SBC-18, SCC-2, SBC-20 and SBC-21 will be undermined. As such, these sites will be monitored for flow weekly starting one month prior to undermining and continuing until one month after undermining at which time they will be monitored monthly for six months before returning back to quarterly monitoring. See Table 7-14. (See previous paragraph's comments regarding sites to be added to the increased monitoring schedule during the undermining of perennial streams)

Various stakeholders identified several groundwater resource sites during this process (during sit down discussions as well as field visits) that weren't initially included in the proposed monitoring plan. The Permittee has incorporated these additional sites into their proposed water-monitoring program. These sites include: springs SBC-16A and SBC-16B located in T 16S R8E Sect 13 NE ¼ NW ¼, Wild Horse Spring (SBC-22) located in T 16S R7E Sect 13 SE ¼ SE ¼ and Bear Canyon Spring (SMH-5) located in T 16S R7E Sect 12 NE ¼ SW ¼. These additional sites are listed in Table 7-14 as well as depicted on Plate 7-4.

Surface Water Monitoring

The application meets the hydrology Operation Plan requirements for Surface Water Monitoring as provided in **R645-301-731.220**.

Table 7-14A, Surface Water Monitoring Matrix: Baseline Collection located on page 7-53A lists the surface water sites that will be utilized for baseline data collection. Page 7-57 provides a comprehensive list of the surface water monitoring sites and their corresponding site name. Table 7-16, Surface Water Sampling, on page 7-58 provides an overview of the surface water sampling program to be utilized during baseline monitoring, operational mining as well as post-mining monitoring. Table 7-17 on page 7-59 provides a list of the surface water quality parameters that will be analyzed for during the monitoring program. Table 7-14 Water Monitoring Matrix: Operational Phase of Mining on page 7-53 provides a comprehensive list of all the proposed monitoring sites. Plate 7-4, Water Monitoring, depicts the locations of the monitoring sites.

As discussed by the Permittee, representatives of the USDA Forest Service and the Division on August 31, 2006, a surface water-sampling site (MH-2 as depicted on Plate 7-4) was established in the upper reach of McCadden Hollow. It was agreed upon by the respective agencies and the Permittee that the MH-2 would be located up-stream of SMH-4 and south of historical monitoring site 16-7-12-6. The site has been added to Table 7-14, Water Monitoring Matrix, as well as to the list of proposed surface water monitoring sites listed on page 7-57 of the MRP.

Surface water monitoring sites were selected based on the conclusions of Appendix 7J (PHC determination document) as well as upon the field investigations that were performed by during the course of the permitting process by regulating agencies and various stakeholders.

Page 7-57 lists the streams that will be monitored during the operational phase of the mining activity. Ten additional surface water-monitoring sites were incorporated into the proposed monitoring program in light of the proposed lease expansion. Two sites were added to Cedar Creek (CK-1 and CK-2) with four additional sites added to the Right Fork of Fish Creek (FC-2, FC-3, FC-4 and FC-5), three additional sites added to the Left Fork of Fish Creek (FC-6, FC-7 and FC-8) and one additional site on the upper reaches of McCadden Hollow.

Flows will be determined by direct measurement (depth times width times 2/3 velocity), by use of portable or stationary weirs or flumes. Qualified personnel following standard procedures with calibrated instruments will take measurements.

Replacement of State Appropriated Water Supply

The application meets the hydrology Operation Plan requirements for State Appropriated Water Supply replacement as provided in **R645-301-731.530**

Beginning on page 7-61 and continuing through page 7-61F, the Permittee outlines the measures and mitigation efforts that will be utilized in the event that a state appropriated water supply is impacted by mining activity. On page 7-61, the Permittee states, "If a state appropriated water supply is impacted by mining and/or mining related activities, C.W. Mining will replace it as required under R645-301-731.530 of the Utah State Code. Also in accordance with federal lease stipulation 21, if any water resource that has been identified for protection is impacted, C.W. Mining will replace the water resource". The Permittee provides the locations for state appropriated water rights with points of diversion within the proposed permit expansion area on Plate 7-12. Figure 7-0 on page 7-61B depicts the water resources identified for protection by the U.S. Forest Service. In addition, on page 7-48 of the submittal, the Permittee states, "If any state appropriated water rights are impacted in the future, C.W. Mining will meet with the water right holder and the Division and develop a site specific water replacement plan".

The Permittee identifies C.O.P. Coal Development, ANR Inc., the United States Forest Service and Huntington, Cleveland Irrigation Company (HCIC) as the primary water rights holders that could potentially be impacted by underground mining activity. On page 7-61C, the Permittee provides a discussion as to possible measures and mitigation efforts that could be taken in the event that a state appropriated water right held by one of the aforementioned water right holders is impacted by mining activity.

Mitigation efforts in relation to USDA Forest service water rights are discussed on page 7-61D. The Permittee indicates, "because of the nature of their use, if these water rights were impacted, the Forest Service would need the water to be restored to the original location." As discussed during the permitting process, the USDA Forest Service would, in all likelihood, require that their water replaced at the source of the flow in the event that there were mining related impacts. The Permittee commits to utilizing pond liners, grouting or other technologies available to repair any cracks that could potentially impact water resources. The Permittee commits to replacing the water at its source. If the impact was a displaced spring, the Permittee has committed to installing guzzlers, wells or other available technology to restore the water.

On page 7-61E, the Permittee discusses possible mitigation efforts in the event that HCIC's water rights are impacted. HCIC's points of diversion for their state appropriated water rights are located downstream of the subsidence area. Because of this, the stock-watering and irrigation uses for HCIC may not require replacement at the source of the flow. HCIC has indicated; however, that they would require the same quantity of water to reach their points of diversions. The Permittee states, "If stock watering or irrigation water were impacted, C.W. Mining would transfer or retire enough of their shares in HCIC to cover the lost water, or any course of action agreed upon between C.W. Mining and HCIC". The Permittee commits to replacing lost flow with equivalent flow from existing springs that they hold water rights on.

On page 7-61F, the Permittee indicates that the requirement to replace or mitigate state appropriated water rights, would be contingent upon the Division finding that the mining activity had contaminated, diminished or interrupted said water rights.

Findings:

Hydrologic information for the Operational Plan regulations meets the requirements of the State of Utah R-645 Coal Mining Rules relative to Surface and Ground Water monitoring.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Monitoring and Sampling Location Maps

The application meets the hydrology requirements for Maps, Plans and Cross Sections of Mining Operations for Monitoring and Sampling Location maps as provided in **R645-301-731**.

Plate 7-4, Water Monitoring, depicts the current water monitoring points as well as the water monitoring points the Permittee has proposed in the lease expansion. Plate 7-12, Water Rights, depicts the state appropriated water rights that have been identified in the Utah Division of Water Rights Database, as well as water resources identified during field investigation. The water rights plate depicts the points of diversion associated with the specific water rights.

On page 7-61B, Figure 7-0: Forest Service Protected Water Resources depicts the locations of the water resources that have been deemed "protected" by the USDA Forest Service.

The water resources identified by water users/stakeholders as important or protected, have been slated for monitoring and are depicted as active monitoring sites on Plate 7-4. The sites are SBC-16A, SBC-16B, SBC-22 and SMH-4.

During an August 22nd, 2006 site visit to the proposed lease expansion, water users/stakeholders identified several hydrologic resource sites of concern. These sites included: Wild Horse Spring (SBC-22) in T16S R7E Sect 13 SE1/4, two springs identified in the field as SBC-16A and SBC-16B (T16S R8E Sect 19 NE1/4 NW1/4) and the spring (SMH-5) located in T16S R7E Sect 12 NW1/4 SE1/4. These sites are depicted on Plate 7-4 as active monitoring sites.

It is the understanding of the Division that the State of Utah Water Rights Division is compiling an addendum to the state appropriated water rights in the area. During field investigations, several water resources were discovered that did not have a water right associated with them in the Water Rights Division database. Once the addendum process is completed, a more complete list of water rights in the proposed lease expansion may be compiled.

Findings:

Hydrologic information for the Maps, Plans and Cross Sections of Mining Operations meets the requirements of the State of Utah R-645 Coal Mining Rules.

RECLAMATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Hydrologic Reclamation Plan

The application meets the Reclamation Plan for the Hydrologic Reclamation Plan as provided in **R645-301-731.600**. No update to the existing hydrologic reclamation plan was submitted because no new surface disturbance is planned for the proposed lease expansion area.

Findings:

The information provided meets the minimum hydrology requirements for the Reclamation Plan of the State regulations.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-729.

Analysis:

The application meets the requirements of the Cumulative Hydrologic Impact Assessment (CHIA) as provided in **R645-301-729**. The hydrologic information provided in the application is adequate to update the Gentry Mountain CHIA. The hydrologic deficiencies identified in previous analyses have been adequately addressed.

Findings:

The Cumulative Hydrologic Impact Assessment information meets the requirements of the Coal Mining Rules.

RECOMMENDATIONS:

Hydrologic information provided in the application meets the requirements of the Coal Mining Rules. The proposed amendment should not be at this time.

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